

Turning to the Restriction Requirement, Applicants note that a Restriction Requirement was made in the parent application, U.S. Patent No. 09/762,112 between a Group I and II. In particular, the Restriction of August 13, 2001, restricted the claims of the parent between

Group I (claims 1-3) drawn to a chromene compound, and  
Group II (claims 9-26) drawn to a photochromic material.

Applicants note that presently captioned application is a divisional application resulting from the original Restriction in the parent application where Group II (claims 9-26) of the parent correspond to presently pending claims 1-18. Notably, Group I claims were prosecuted successfully into U.S. Patent No. 6,525,194 with the aid of the present Examiner.

Accordingly, Applicants respectfully submit that the Examiner cannot again restrict the claims again particularly since the present divisional application is a result of a previous Restriction Requirement. Therefore, Applicants respectfully request the Examiner to withdraw the outstanding Restriction. Alternatively, Applicants respectfully traverse the Restriction in view of the following.

**SUMMARY OF RESTRICTION REQUIREMENT  
AND SPECIES ELECTION**

The Restriction Requirement states as follows:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-3, drawn to photochromic material according to the formula in claim 1.

II. Claims 4-6, drawn to photochromic optical material according to the formula in claim 1.

III. Claims 7-9 and 13-15, drawn to photochromic polymerizable composition containing the compound according to the formula in claim 1.

IV. Claims 10-12 and 16-18, drawn to photochromic polymerizable composition containing the compound according to the formula in claim 1 and a polymerizable initiator.

**PROVISIONAL ELECTION**

Applicants provisionally elect with traverse Group I, claims 1-3, drawn to a photochromic material according to the formula in claim 1 as stated in the Restriction Requirement. With regard to the election of a particular species, Applicants elect, again with traverse, the compound of Example 13 used in Example 22.

### **TRAVERSAL**

Applicants respectfully traverse the Examiner's Restriction Requirement as to Groups I-IV because the presently pending claims 1-18 all share a special technical feature. However, the Restriction alleges that a special technical feature of a chromene compound as shown on page 3 of the Restriction is not present because the chromene compounds do not qualify as a special technical feature.

In particular, the Restriction alleges that chromene compounds were known in the prior art and therefore cannot represent a special technical feature(s). In other words, the Restriction states that the alleged technical feature of chromene compounds do not provide a contribution over the art and thus cannot be considered to be a "special technical feature" under PCT rules 13.1 and 13.2.

Applicants respectfully traverse this allegation because the indicated chromene compounds were recently patented in U.S. Patent No. 6,525,194, and therefore could not have possibly been known in the art or belong to a recognized class of chemical compounds.

Turning to the rule, the touchstone for requiring restriction is determining whether two or more independent and

distinct inventions are claimed within the same application. MPEP §806. Restriction should never be required where the claims of an application define the same essential characteristics of a single disclosed embodiment of the invention. MPEP §806.03.

In Caterpillar Tractor Co. v. Comm. Of Patents and Trademark, the court held that in a national stage application filed under 35 U.S.C. § 371, the Examiner must apply PCT Rule 13.2 in determining unity of invention. 650 F.Supp. 218; 231 U.S.P.Q. 590 (E.D.Va.1986); See MPEP §1850. PCT Rule 13.2 in turn states that unity of invention exists where the claimed inventions share one or more special technical features. Id. The term special technical feature is defined as those technical features that define a contribution which each of the inventions considered as a whole, makes over the prior art. Id.

In chemical cases, PCT Rule 13.2 states that a corresponding special technical feature can be shown among the members of a Markush group when (1) all alternatives have a common property; (2) a common structure is present; and (3) all alternatives belong to a recognized class of chemical compounds. Id.

However, as noted supra, the allegation that the chromene

compounds were known in the prior art is clearly mistaken given the recent patenting of the chromene compounds in U.S. Patent No. 6,525,194. Since chromene compounds were not known in the prior art they are indeed special technical features which define a patentable contribution and therefore impart unity of invention among the various embodiments of the invention as presently claimed.

For all these reasons, Applicants respectfully traverse the Restriction Requirement and respectfully request the Examiner to withdraw the Restriction and examine all claims as presently pending.


#### **CONCLUSION**

In view of the foregoing, Applicants respectfully request the Examiner to reconsider and withdraw the restriction requirement and to examine all of the claims pending in this application.

If the Examiner has any questions or wishes to discuss this matter, the Examiner is welcomed to telephone the undersigned attorney.

Respectfully submitted,

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Attorney Docket No. SPO-587/DIV  
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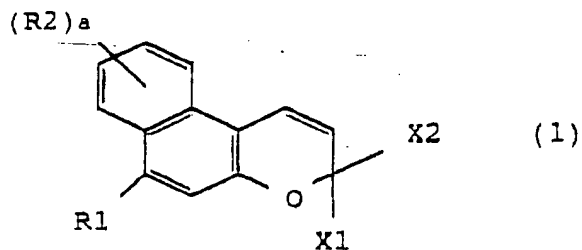
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: ) Group Art Unit: 1626  
MOMODA; MATSUOKA; NAGOU ) Examiner: Andrea Small  
Serial No. 10/069,168 )  
Filed: February 19, 2002 )  
For: **CHROMENE COMPOUND**

APPENDIX A

Please amend the claims as indicated according to 37 C.F.R.  
§ 1.121 concerning a manner for making claim amendments.

1. (Currently amended) A photochromic material containing  
a chromene compound represented by the following general formula  
(1),



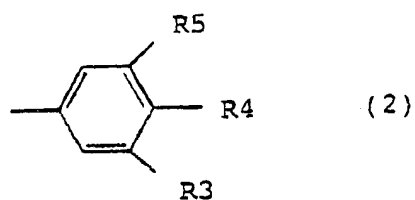
wherein R1 is a substituted amino group, a substituted or  
unsubstituted heterocyclic group having a nitrogen atom, as a  
hetero atom, bonded to a naphthopyran ring or a condensed  
heterocyclic group in which said heterocyclic group is condensed

with an aromatic hydrocarbon ring or an aromatic heterocyclic ring

R2 is an alkyl group, an alkoxyl group, an aralkoxyl group, an aralkyl group, a substituted amino group, a cyano group, a substituted or unsubstituted aryl group, a halogen atom, a substituted or unsubstituted heterocyclic group having, as a hetero atom, a nitrogen atom, bonded to the naphthopyran ring, or a condensed heterocyclic group in which said heterocyclic group is condensed with an aromatic hydrocarbon ring or an aromatic heterocyclic ring,

"a" is an integer of 0 to 3,

X1 is a group represented by the following formula (2),

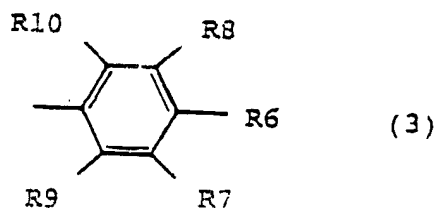


wherein each of R3, R4 and R5 is a hydrogen atom, a substituted amino group, a substituted or unsubstituted heterocyclic group having a nitrogen atom, as a hetero atom, bonded to a benzene ring, or a condensed heterocyclic group in which said heterocyclic group is condensed with an aromatic



hydrocarbon ring or an aromatic heterocyclic ring, but R3, R4 and R5 are not hydrogen atoms simultaneously, and

X2 is a group represented by the following formula (3),



wherein R6 is a hydrogen atom; an electron attractive group selected from the group consisting of a trifluoromethyl group, a trifluoromethoxy group, a cyano group, a sulfonyl group, an alkylsulfonyl group, an arylsulfonyl group and a nitro group; or an alkoxyl group,

each of R7 and R8 is (i) a hydrogen atom, an aliphatic hydrocarbon group having not less than three carbon atoms, a halogen atom, a trifluoromethyl group, a trifluoromethoxy group, a cyano group, a sulfonyl group, an alkylsulfonyl group an arylsulfonyl group or a nitro group when R6 is not a hydrogen atom, or (ii) a hydrogen atom, a halogen atom, a trifluoromethyl group or a trifluoromethoxy group when R6 is a hydrogen atom,

each of R9 and R10 is a hydrogen atom a cyano group, an alkoxy group having 1 to 5 carbon atoms, a fluorine atom or a chlorine atom,

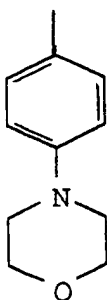
wherein, when R4 in the group represented by the above formula (2) is the substituted amino group, the substituted or unsubstituted heterocyclic group or is the condensed heterocyclic group, R6 is not an alkoxy group, and R6, R7, R8, R9 and R10 are not hydrogen atoms simultaneously

provided that when:

R1 is a substituted or unsubstituted heterocyclic group having a nitrogen atom, as a hetero atom, bonded to a naphthopyran ring, and

"a" is an integer of zero, and

X1 is



then

X2 is not trifluoromethyl-phenyl.

2. (Previously amended) A photochromic material containing the chromene compound of claim 1, wherein in the group represented by the formula (3) in the above general formula (1):

R6, R7, R8, R9 and R10 are not hydrogen atoms simultaneously,

R6 is a hydrogen atom or an electron attractive group selected from the group consisting of a trifluoromethyl group, a cyano group, a sulfonyl group, an alkylsulfonyl group, an arylsulfonyl group and a nitro group,

when R6 is not a hydrogen atom, each of R7 and R8 is a hydrogen atom, an aliphatic hydrocarbon group having not less than 3 carbon atoms, a fluorine atom, a trifluoromethyl group, a cyano group, a sulfonyl group, an alkylsulfonyl group, an arylsulfonyl group or a nitro group, and

when R6 is a hydrogen atom, each of R7 and R8 is a hydrogen atom.

3. (Previously amended) A photochromic material containing the chromene compound of claim 1 wherein in the group represented by the formula (3) in the above general formula (1):

R6 is a hydrogen atom, an alkoxyl group or a trifluoromethoxy group,

each of R7 and R8 is a hydrogen atom, a halogen atom, a trifluoromethyl group or a trifluoromethoxy group, wherein both R7 and R8 are not hydrogen atoms, when R4 in formula (2) in the general formula (1) is the substituted amino group the substituted or unsubstituted heterocyclic group, or the condensed heterocyclic group, and

both R9 and R10 are hydrogen atoms.

4. (Previously amended) A photochromic optical material containing the chromene compound of claim 1.

5. (Previously amended) A photochromic optical material containing the chromene compound of claim 1.

6. (Previously amended) A photochromic optical material containing the chromene compound of claim 3.

7. (Previously amended) A photochromic polymerizable composition containing the chromene compound of claim 1 and a polymerizable monomer.

8. (Previously amended) A photochromic polymerizable composition containing the chromene compound of claim 2 and a polymerizable monomer is a (meth)acrylic acid ester compound.

9. (Previously added) A photochromic polymerizable composition containing the chromene compound of claim 3 and a polymerizable monomer.

10. (Previously added) The photochromic polymerizable composition of claim 7, further containing a polymerization initiator.

11. (Previously added) The photochromic polymerizable composition of claim 8, further containing a polymerization initiator.

12. (Previously added) The photochromic polymerizable composition of claim 9, further containing a polymerization initiator.

13. (Previously added) The photochromic polymerizable composition of claim 7, wherein the polymerizable monomer is a (meth)acrylic acid ester compound.

14. (Previously added) The photochromic polymerizable composition of claim 8, wherein the polymerizable monomer is a (meth)acrylic acid ester compound.

15. (Previously added) The photochromic polymerizable composition of claim 9, wherein the polymerizable monomer is a (meth)acrylic acid ester compound.

16. (Previously added) The photochromic polymerizable composition of claim 10, wherein the polymerizable monomer is a (meth)acrylic acid ester compound.

17. (Previously added) The photochromic polymerizable composition of claim 11, wherein the polymerizable monomer is a (meth)acrylic acid ester compound.

18. (Previously added) The photochromic polymerizable composition of claim 12, wherein the polymerizable monomer is a (meth)acrylic acid ester compound.